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SAMSUNG

# LW15E13C/LW17E14C

## (For PAL systems)

## TFT-LCD TV/Monitor

**Owner's Instructions**

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1. Adjust computer resolution and screen injection rate (refresh rate) in control panel of computer as described below to enjoy the best quality of picture. You can have an uneven quality of picture in the screen if the best quality of picture is not provided in TFT-LCD.
   - Resolution: 15" 1024 x 768
     17" 1280 x 1024
   - Vertical frequency (refresh rate): 60 Hz

2. TFT LCD panel manufactured by using advanced semiconductor technology with precision of 99.999% above is used for this product. But the pixels of RED, GREEN, BLUE and WHITE color seem to be bright sometimes or some of black pixels could be seen. This is not from bad quality and you can use it without uneasiness.
   - For example, the no. of TFT LCD pixels that is contained in this product are 2,359,296 (15"), 3,932,160 (17").

3. When you clean the monitor and the panel outside, please apply the recommended small amount of cleaner by using soft and dry cloth and polish it. Let LCD area not to be forced but to be scrubbed out softly. If excessive force is applied, you can have a stain on it.

4. If you are not satisfied with the quality of picture, you can get better quality of picture by executing "auto adjustment function" in display screen that is appeared as window termination button is pressed. If there's still noise after automatic adjustment, use FINE/ COARSE adjustment function.

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# Safety Instructions

1. Before connecting the AC power cord to the DC adapter outlet, make sure the voltage designation of the DC adapter corresponds to the local electrical supply.
2. Never insert anything metallic into the cabinet openings of the liquid crystal display (LCD) monitor; doing so may create the danger of electric shock.
3. To avoid electric shock, never touch the inside of the LCD monitor. Only a qualified technician should open the case of the LCD monitor.
4. Never use your LCD monitor if the power cord has been damaged. Do not allow anything to rest on the power cord, and keep the cord away from areas where people can trip over it.
5. Be sure to hold the plug, not the cord, when disconnecting the LCD monitor from an electric socket.
6. Openings in the LCD monitor cabinet are provided for ventilation. To prevent overheating, these openings should not be blocked or covered. Also, avoid using the LCD monitor on a bed, sofa, rug, or other soft surface. Doing so may block the ventilation openings in the bottom of the cabinet. If you put the LCD monitor in a bookcase or some other enclosed space, be sure to provide adequate ventilation.
7. Put your LCD monitor in a location with low humidity and a minimum of dust.
8. Do not expose the LCD monitor to rain or use it near water (in kitchens, near swimming pools, etc.). If the LCD monitor accidentally gets wet, unplug it and contact an authorized dealer immediately. You can clean the LCD monitor with a damp cloth when necessary, but be sure to unplug the LCD monitor first.
9. Place the LCD monitor on a solid surface and treat it carefully. The screen is made of thin glass with a plastic front surface and can be damaged if dropped, hit or scratched. Do not clean the front panel with keton-type materials (e.g., acetone), ethyl alcohol, toluene, ethyl acid, methyl, or chloride – these may damage the panel.
10. Locate your LCD monitor near an easily accessible AC outlet.
11. If your LCD monitor does not operate normally – in particular, if there are any unusual sounds or smells coming from it – unplug it immediately and contact an authorized dealer or service center.
12. High temperature can cause problems. Don't use your LCD monitor in direct sunlight, and keep it away from heaters, stoves, fireplaces, and other sources of heat.
13. Unplug the LCD monitor when it is going to be left unused for an extended period of time.
14. Unplug your LCD monitor from the AC outlet before any service.

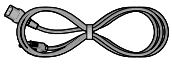
**CAUTION**
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

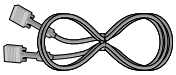
# Unpacking Your TV/Monitor

Please make sure the following items are included with your monitor. If any items are missing, contact your dealer.

Driver Installation Diskette
(Not available in all locations)



Power Cord



15-pin D-Sub Signal Cable

Warranty Card
(Not available in all locations)

TV/Monitor

DC Adapter

Stereo Audio Cable

Manual

Scart Jack

Remote Controller

Batteries
(AAA x 2)

Tuner Box

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## Setting up an Ergonomic Workstation

Consider the advice given below before you install your monitor.

### TV/Monitor location

Choose a position that exposes your monitor to the least reflection from lights or windows, usually at a right angle to any window.

### Workstation height

Place your LCD monitor so that the top of the screen is slightly below your eye level when you are comfortably seated.

### Viewing angle

Tilt the screen until you feel comfortable working with your monitor.

Figure 1. Tilt the screen

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## Connecting Your LCD TV/Monitor

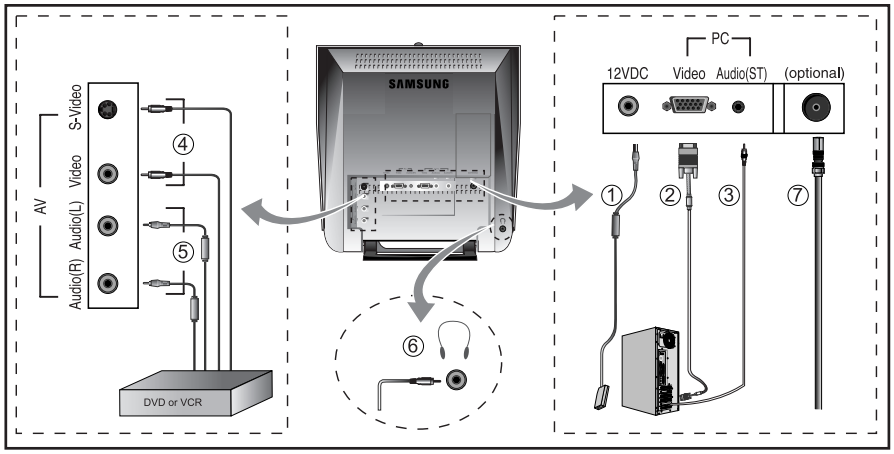


Figure 2. Cable connections

**1. Connecting Computer ( ① ② ③ )**

A. Connect the power cord to the DC Adaptor and connect the adaptor jack to the DC 12V power connector on the back of the monitor.

B. Connect the 15-pin D-SUB of the video signal cable to the PC video connector on the back of the monitor.

C. Connect the stereo audio cable to "Audio (ST)" on the back of the monitor and the other end to " Audio Out" terminal of the sound card on your computer.

D. If necessary, please install monitor driver contained on the accompanied CD. For driver installation, please refer "Installing Video Driver" section on page 7.

**2. Connecting External A/V Devices ( ④ ⑤ )**

A. Connect RCA (Yellow) or S-VHS cable to an appropriate external A/V device such as VCR, DVD or camcorder. (RCA cable and S-VHS cable not included)

B. Connect RCA audio cables to "Audio (R)" and "Audio (L)" terminals and the other ends to corresponding audio out terminals on the A/V device. (Stereo-RCA cable not included)

C. Headphone may be connected to the headphone output on the left-hand side of the monitor marked ( ⑥). ***While the headphone is connected, the sound from the built-in speakers will be disabled.***

D. The DTV function is not supported in this model.

**3. Connecting TV/CATV ( ⑦ )**

A. Connect an antenna or CATV cable to the antenna terminal on the back of the monitor.

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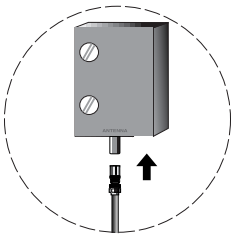
## Connecting TV Tuner Box

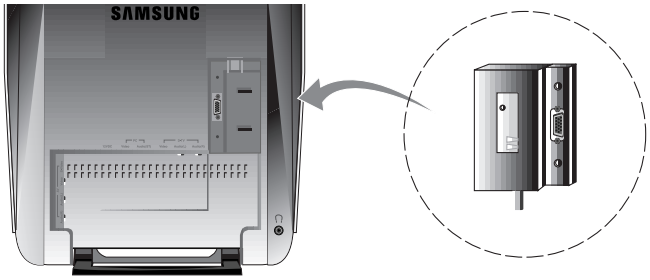
**1** Unplug the DC adapter.

**2** Isolate the cap of the tuner box.

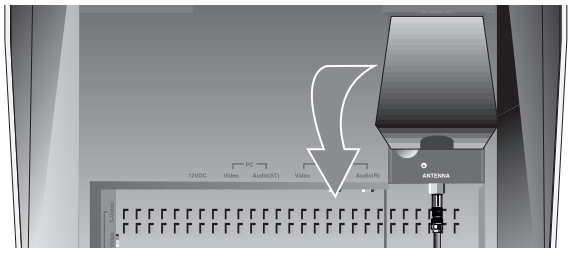
**3** Connect antenna or CATV cable to "Antenna" port of the tuner box.



**4** Insert the tuner box to the area for optional tuner box on the back of the monitor. Please use a coin to tighten the two scerws to fix the tuner.




**5** Put the cap of the tuner box on.




**6** Connect the power cord of DC adapter then the monitor will be ready for TV function.

# Setting up Your LCD TV/Monitor

## Plug and Play

The adoption of the new **VESA®** Plug and Play solution eliminates complicated and time consuming setup. It allows you to install your monitor in a Plug and Play compatible system without the usual hassles and confusion. Your PC system can easily identify and configure itself for use with your display. This monitor automatically tells the PC system its Extended Display Identification Data (EDID) using Display Data Channel (DDC) protocols so the PC system can automatically configure itself to use the flat panel display. If your PC system needs a video driver, follow the instructions given below according to the operating system your computer uses.

## Installing the Video Driver

The CD that accompanies this product contains the necessary drivers for installing your monitor. Please refer to the driver installation instructions included with your CD package for more information.

## Self-Test Feature Check (STFC)

Your monitor provides a self-test feature that allows you to check whether your monitor is functioning properly. Make sure that PC is selected as a primary source by checking if the source indicator LED labeled "PC" is on. If your monitor and computer are properly connected but the monitor screen remains dark and the power indicator is blinking, run the monitor self-test by following the steps given below:

Figure 3. Power Indicator

1. Turn off both your computer and the monitor.
2. Unplug the video cable from the back of the computer.
3. Turn on the monitor.

If the monitor is functioning properly, you will see a white box with a large blue oval Samsung logo and an error messsage “Check Signal Cable.” in red color.

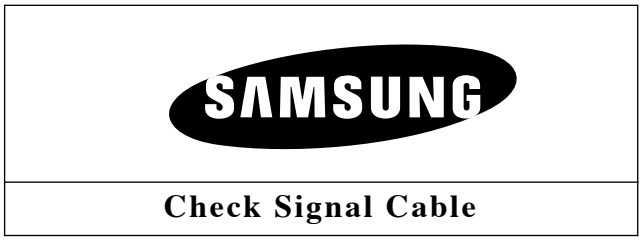



Figure 4. Monitor self-test screen

This box also appears during normal operation if the video cable becomes disconnected or damaged.

**4** Turn off your monitor and reconnect the video cable; then turn on both your computer and the monitor.

If your monitor screen remains blank after following the previous procedure, check your video controller and computer system; your monitor is functioning properly.

## Getting Help

If your monitor does not display an image, check your cable connections and refer to "Troubleshooting" on page 25. If you experience difficulties with the quality of the displayed image, push Auto Button (see page 9) and refer to "Adjusting Your LCD Monitor" on page 9 or "Troubleshooting" on page 25.

## Warm-up Time

All LCD monitors need time to become thermally stable whenever you turn on the monitor after letting the monitor be turned off for a couple of hours. Therefore, to achieve more accurate adjustments for parameters, allow the LCD monitor to warm (be on) for at least 20 minutes before making any screen adjustments.

## User Controls

Your LCD monitor allows you to easily adjust the characteristics of the image being displayed. All of these adjustments are made using the control buttons on the front of the monitor. While you use these buttons to adjust the controls, an OSD shows you their numeric values as they change.

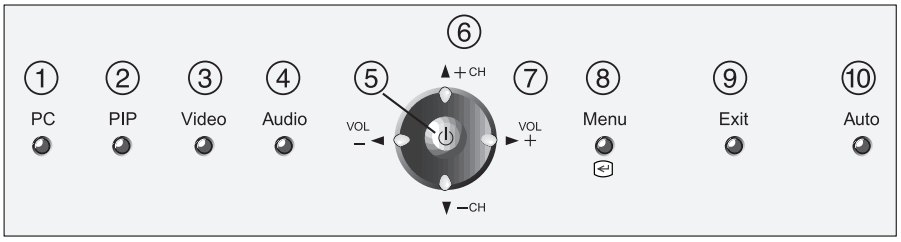



Figure 5. User control locations

| No. | Name | Description |
|---|---|---|
| 1 | PC | ■ Selects PC source.<br>■ PIP window off. |
| 2 | PIP | ■ Activates PIP(Picture-in-Picture) window directly in PC mode.<br>■ Selects video sources (Video/S-video/TV). |
| 3 | Video | ■ Activates full screen video window.<br>■ Selects video sources (Video/S-video/TV). |
| 4 | Audio | ■ Selects audio source (PC/Video/TV). |
| 5 | Power | ■ Turns ON/OFF the monitor.<br>■ Indicates the status of the monitor.<br>-Green : Normal Operation.<br>-Amber : Power Saving Mode or Disconnected Signal Cable. |
| 6 | ▼ ▲ | ■ Moves the selector up or down on the OSD. |
| | - CH + | ■ Increases or decreases the channel number. |

# Adjusting Your LCD TV/Monitor

| No. | Name | Description |
|---|---|---|
| 7 | ◀ ▶ | ■ Moves the selector left or right on the OSD.<br>■ Increases or decreases the values of the selected function. |
| | **- VOL +** | ■ Increases or decreases the level of audio volume. |
| 8 | **Menu** ⏎ | ■ Opens the OSD and selects the highlighted function. |
| 9 | **Exit** | ■ Exits from menus and sub-menus.<br>■ Exits from the OSD system. |
| 10 | **Auto** | ■ "Auto" allows the monitor to self-adjust to the incoming video signal. The values of fine, coarse and position are adjusted automatically. |

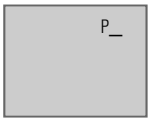
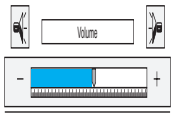
## Automatic Save

Whenever you open the OSD and allow an adjustment window to remain active for about 3 seconds without pressing other buttons, the monitor automatically saves any adjustment you have made. These changes are saved into a user area in the monitor.
The monitor can save adjustments for up to 5 user modes. It has 9 for LW15E13C (11 for LW17E14C ) factory preset or preload modes, one for each signal frequency as listed in table 7 on page 31. If you have made no adjustments, the OSD disappears and the monitor does not save anything.

# Adjusting Your LCD TV/Monitor

## Direct-Access Features

**While you are watching full screen TV or in PIP mode**

| | | |
|---|---|---|
| **Program** |  | Valid only after performing "Channel auto program". When OSD is not on the screen, push the " ▼ " or " ▲ " button to select program channel number.<br>**1** Push the " ▼ " button to decrease channel number.<br>**2** Push the " ▲ " button to increase the channel number. |
| **Volume** |  | When OSD is not on the screen, push the " ◀ " or " ▶ " button to adjust volume.<br>**1** Push the " ◀ " button to decrease the volume.<br>**2** Push the " ▶ " button to increase the volume. |

## OSD Lock/Unlock

While OSD window is not on, push and then hold Menu button for about 5 seconds to Lock or Unlock OSD menus. When OSD menus are locked, all OSD menus are disabled and colored in gray to indicate that those functions are not accessible but the following functions:

1. PC
   - Brightness
   - Contrast
2. TV
   - Channel
   - Volume
3. Control buttons
   - Direct access keys: PC, PIP, Video, Audio, Channel, Volume, Menu, Exit, Auto
4. Remote Controller
   - All direct access keys on the remote controller

**Initial OSD icons**

Depending on the configuration of the monitor, the appearance of OSD is different.

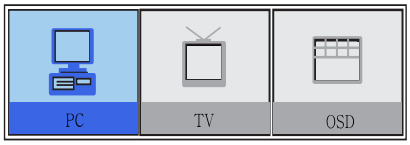



Fig. 6. With Optional TV Tuner

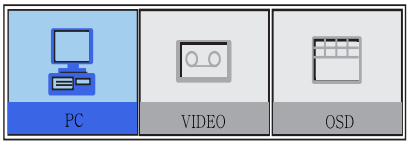
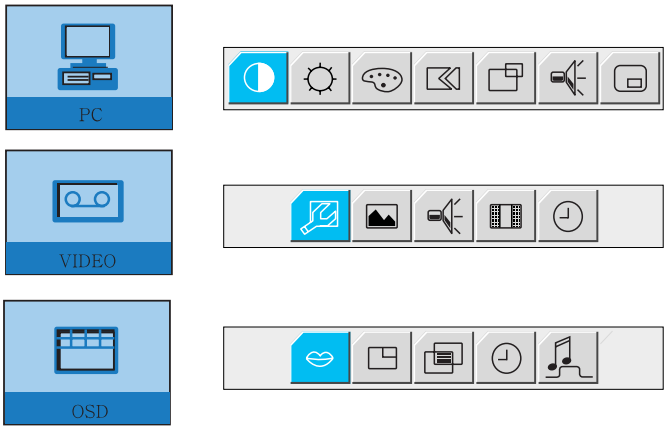



Fig. 7. Without Optional TV Tuner

# Adjusting Your LCD TV/Monitor

Some OSD menus are disabled in gray color when they are not available in a certain mode of operation. Those menus are enabled when corresponding OSD menus are activated.

## On Screen Display (OSD)




## Accessing the menu system

1. With the OSD off, push the **Menu** button to display the main OSD menu.
2. Use the " ▼ ▲ ◀ ▶ " buttons to move from one function to another. As you move from one icon to another, the function name changes to reflect the function or group of functions represented by that icon. See Table 1 starting on the next page to view a complete list of all of the functions available for the monitor.
3. Press the **Menu** button once to activate the highlighted function, then follow the Tool Tips to select the function and adjust the value.
4. Use " ▲ " and " ▼ " buttons to select the sub-menu, and press the **Menu** button once to activate the selected sub-menu.
5. After selecting a function, use the " ◀ " and " ▶ " buttons to make necessary adjustments. The setting bar moves and the numeric value indicator changes to reflect your adjustments.

   *NOTE: The numeric value indicator is provided as a point of reference only and has nothing to do with a real measurement.*
6. Push the **Exit** button a couple of times to return to the main menu to select another function or to exit from the OSD.

# Adjusting Your LCD TV/Monitor

## OSD functions and adjustments

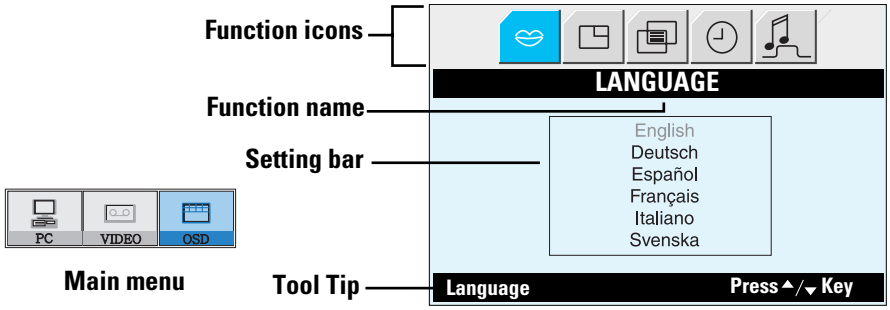



Table 1. Screen controls

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| OSD | | **LANGUAGE** | OSD language and appearence can be changed. |
| | | | English<br>Deutsch<br>Español<br>Français<br>Italiano<br>Svenska |
| | | **POSITION** | Move the OSD Window to the vertical and horizontal direction. |
| | | **HALFTONE** | Change the opaqueness of the background of the OSD. |
| | | **DURATION** | The number of seconds that the OSD will remain visible before disappearing. |
| | | **BEEP** | Enables or Disables the sound generated when you touch the control buttons. |

# Adjusting Your LCD TV/Monitor

## PC functions and adjustments

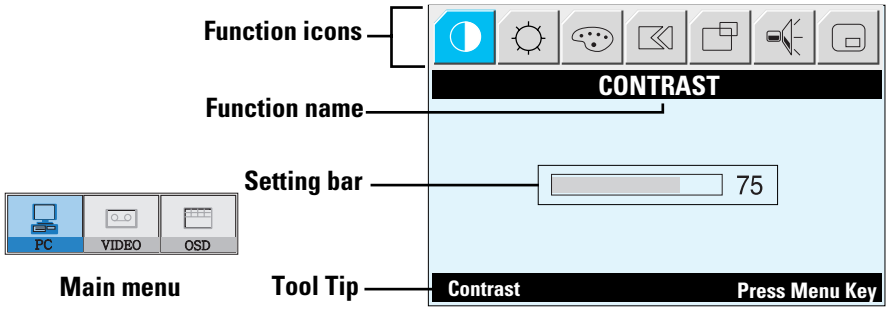
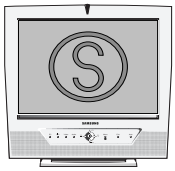
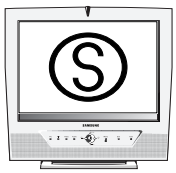
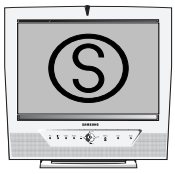
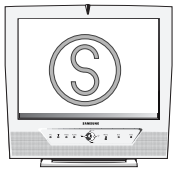



Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ | |
|---|---|---|---|---|
| PC | | **CONTRAST** |  |  |
| | | **BRIGHTNESS** |  |  |
| | | **COLOR** | The tone of color can be changed from redish white to bluish white. The individual color components are also user customizable. | |
| | | ■ Mode1 | Redish white. | |
| | | ■ Mode2 | Plain white. | |
| | | ■ Mode3 | Bluish white. | |
| | | ■ User Mode | User customizable. | |

# Adjusting Your LCD TV/Monitor

Table 1. Screen controls (Continued)

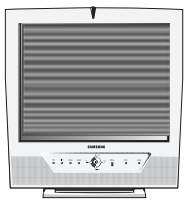
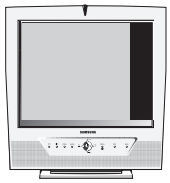
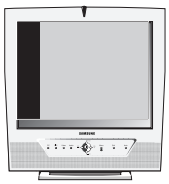
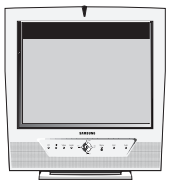
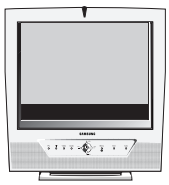
<table>
<tr><th>Main Menu</th><th>Icon</th><th>Menus and Sub-menus</th><th>Function Descriptions<br>◀ ▶</th></tr>
<tr><td rowspan="6">PC</td><td rowspan="6"></td><td>■ Reset</td><td>Color parameters are replaced with the factory default values.</td></tr>
<tr><td>IMAGE<br>IMAGELOCK</td><td>Image Lock is used to fine tune and get the best image by removing noises that create unstable images with jitters and shimmers.</td></tr>
<tr><td>■ Coarse<br>■ Fine</td><td>The Coarse and Fine adjustments allow you to fine tune the image quality of your monitor to your preference.<br>Use the " ◀ " and " ▶ " buttons to remove any noise.<br>If satisfactory results are not obtained using the Fine adjustment, use the Coarse adjustment and then use Fine again.<br>This function may change the width of the image. Use the H-Position menu to center the image on the screen.
<table>
<tr><td>When Coarse value is wrong.</td><td>When Fine value is wrong.</td></tr>
<tr><td> </td><td>  </td></tr>
</table>
</td></tr>
<tr><td>■ Information</td><td>Display current display mode.</td></tr>
<tr><td>■ Reset</td><td>Image lock and position parameters are replaced with the factory default values.</td></tr>
</table>

Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| PC | | IMAGE SIZE | The size of the image being displayed can be handled in several different ways. |
| | | ■ Expand1 | Resize the image to fill the whole screen. (applicable to PC RGB only) |
| | | ■ Expand2 | Expand images keeping the original aspect ratio. (applicable to PC RGB only) |
| | | ■ Normal | Display the incoming image as it is. (applicable to PC RGB only) |
| | | ■ Zoom | The image can be magnified up to 64 times larger than the original image. The enlarged image can also be panned. |
| | | ■ Pan | Move the zoomed image hotizontally and vertically. |
| | | IMAGE EFFECT | Image being displayed can be made softer or sharper.<br>• Sharpen more<br>• Sharpen<br>• Medium<br>• Soften<br>• Soften more |

# Adjusting Your LCD TV/Monitor

Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| PC | | **H-POSITION** |   |
| | | **V-POSITION** |   |
| | | **SOUND** | The monitor has a built-in high fidelity stereo audio amplifier. The audio circuit processes audio signal from various external input sources such as DVD, VCR, TV or PC. |
| | | ■ Bass | Bass: Emphasize low frequency audio. |
| | | ■ Treble | Treble: Emphasize high frequency audio. |
| | | ■ Surround | On, Off |
| | | **PIP (Picture-in-Picture)** | When external A/V devices such as VCR, DVD or RF(TV)cable are connected to the monitor, PIP allows you to watch video from such devices in a small window super-imposed on pc video signal. |
| | | ■ Size | Resize PIP window. |
| | | ■ Position | Change PIP window position. |

# Adjusting Your LCD TV/Monitor

## TV/ Video functions and adjustments

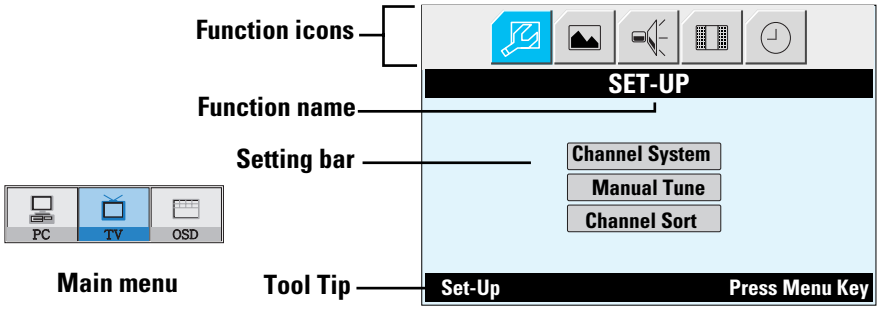



Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| TV | | **SET-UP** | The channel system can be set in several different ways. |
| | | ■ *Channel system | Select a channel system that is being used in your region.<br>(See "PAL broadcasting systems" on page 32)<br>• CCIR<br>• Italy<br>• IRE<br>• Australia<br>Upon selecting a channel system, you will be asked if you want to perform "Channel auto program ". Select "OK " to perform the "Channel auto program " or select "Cancel" to select different channel system. |

* It takes 8 minutes in average to scan 70 channels. The amount of time to finish channel scanning is completely depending on the number of channels avilable in your region.

* TV menu ( ) is available only aftrer the installation of TV tuner.
Before installing the TV tuner, Menus are all in gray color and navigation is disabled as well.

# Adjusting Your LCD TV/Monitor

Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| TV | | ■ Manual Tune | Due to the weak signals or a wrong antenna configuration, some of the channels may not be tuned correctly or there could be a mismatch of the channel number between a Real channel and a Program channel. Use this menu to fine tune and perform necessary corrective actions.<br>• Program : Program numbers are given in a sequential manner based on the search order of Channel Auto Program.<br>• Channel: Channel numbers are given according to the CCIR or Australia standard channel table.<br>• Save<br>- Use ← → buttons to fine tune the picture quality and then select "Save"menu. Now press "Menu" button to save the fine tuned channel.<br>• Add<br>- Use this function to add a real channel.<br>- Use ← → buttons to select a desired channel and then select "Add" menu. Now press "Menu" button to add the channel.<br>• Cancel<br>- Use this menu to undo the current job. |

# Adjusting Your LCD TV/Monitor

Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| TV | | ■ Channel Sort | Channel order can be re-arranged by this menu. If you want to place P5 before P2, see the example below.<br><br>Example) From : P5<br>To : P2<br>Before: P1 P2 P3 P4 P5<br> <br>New: [ P1 P5 P2 P3 P4 ]<br>P1 P2 P3 P4 P5 |
| | | ■ Store | Select "store" menu to save the adjustment. |
| | | ■ Channel Delete | Select a channel you wish to delete by using the " From" menu, them select "Channel Delete" to delete the selected channel. |
| TV<br>VIDEO | | **PICTURE** | This funtion is active if you select an input source other than PC.(DVD,VCR,TV) |
| | | ■ Contrast | Adjust the contrast of video or TV without affecting PC RGB's contrast. |
| | | ■ Brightness | Adjust the brightness of video or TV without affecting PC RGB's brightness. |
| | | ■ Sharpness | Adjust the sharpness of video or TV image. |
| | | ■ Color | Change the richness of color. |
| | | ■ Reset | Picture parameters are replaced with the factory default values. |
| | | **SOUND** | The monitor has a built-in high fidelity stereo audio amplifier. The audio circuit processes audio signal from various external input sources such as DVD, VCR, TV or PC. |

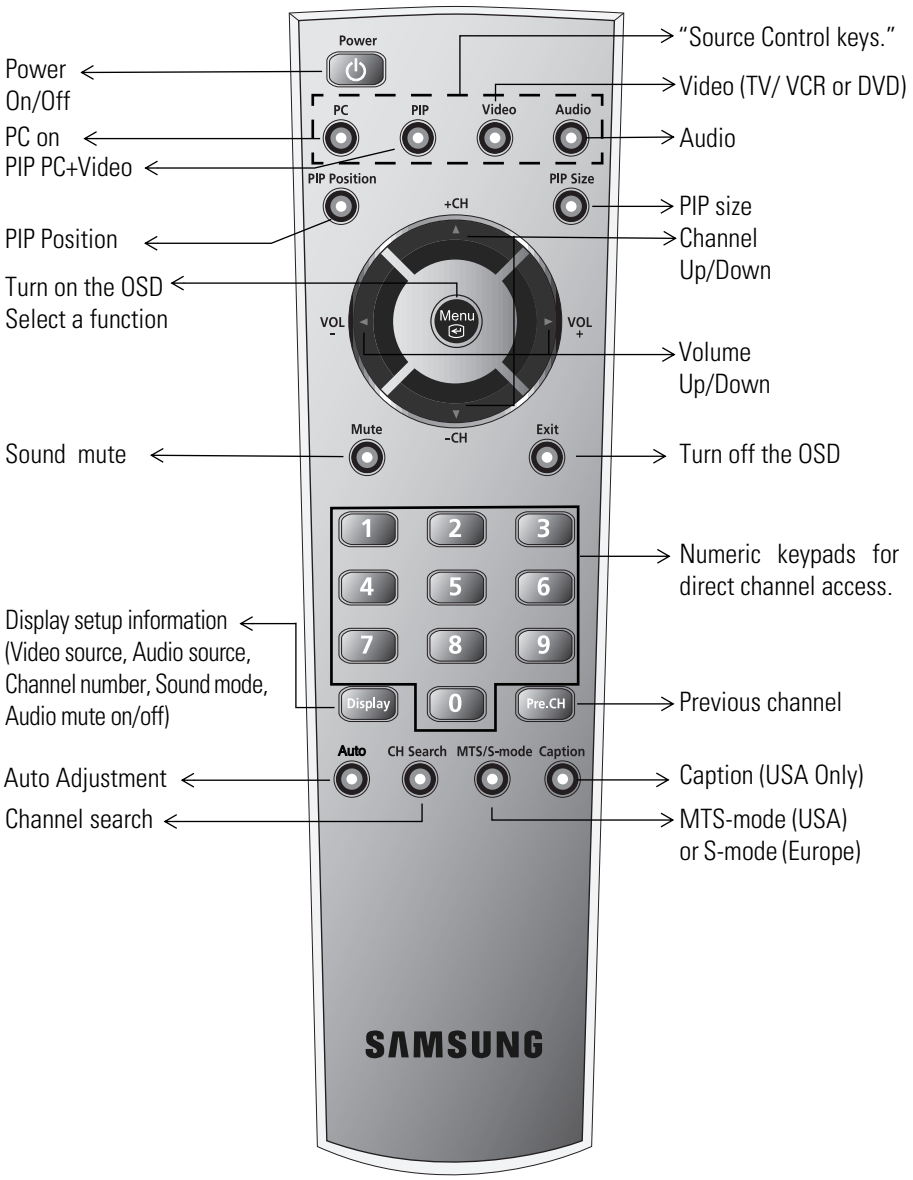
# Adjusting Your LCD TV/Monitor

Table 1. Screen controls (Continued)

| Main Menu | Icon | Menus and Sub-menus | Function Descriptions ◀ ▶ |
|---|---|---|---|
| TV<br>VIDEO | | ■ Bass | Bass: Emphasize low frequency audio. |
| | | ■ Treble | Treble: Emphasize high frequency audio. |
| | | ■ Surround | On, Off |
| | | **ACTIVE AREA** | The Active Area of the image being displayed can be handled in Narrow and Wide.<br>This funchin is not working in PIP. |
| | | | Narrow: Wide: |
| | | **TIMER** | The monitor system will turn off automatically if one of three time intervals is selected.<br>Off.<br>30 min.<br>60 min.<br>120 min. |

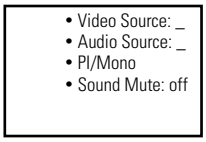
# Appendix

## By Remote-Control



# Appendix

■ **Features that can only be accessed via remote controller**

<table>
<tr><td>Display</td><td>Shows a selected video source, audio soure, current channel number sound mode and the state of audio mute on the upper right corner of the screen.<br>  <br></td></tr>
<tr><td>MTS/S-Mode</td><td>You can set the audio mode by using this button. When you press this button, current sound mode is displayed on the lower left corner of the screen<br> <br><br>Note: LW15E13C/LW17E14C have an automatic stereo detection feature. Thus, depending on the types of audio, the monitor automatically changes their audio mode from Mono to Stereo or vice versa.
<table>
<tr><td></td><td>Audio Type</td><td>MTS/S-Mode</td><td>Default</td></tr>
<tr><td rowspan="3">FM Stereo</td><td>Mono</td><td>Mono</td><td rowspan="2">Automatic Change</td></tr>
<tr><td>Stereo</td><td>Mono ← → Stereo</td></tr>
<tr><td>Dual</td><td>Dual1 ← → Dual2</td><td>Dual1</td></tr>
<tr><td rowspan="3">NICAM</td><td>Mono</td><td>Mono</td><td rowspan="2">Automatic Change</td></tr>
<tr><td>Stereo</td><td>Mono ← → Stereo</td></tr>
<tr><td>Dual</td><td>Mono → Dual1 → Dual2<br>↑ ↓</td><td>Dual1</td></tr>
</table>
</td></tr>
</table>

# Appendix

## PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain period of time. The available modes are "On", "Standby", "Sleep", and "Deep Sleep". PowerSaver operates with a VESA DPMS compliant video card installed in your computer. You use a software utility installed on your computer to set up this feature. See Table 2 below for details.

Table 2. Power-saving modes

| State | Normal Operation | Power-Saving Function mode (EPA/ NUTEK/ ENERGY2000) | | |
|---|---|---|---|---|
| | | Standby Mode | Sleep Mode Position A1 | Deep Sleep Mode Position A2 |
| Horizontal Sync<br>Vertical Sync | Active<br>Active | Inactive<br>Active | Active<br>Inactive | Inactive<br>Inactive |
| Power Indicator | Green | Amber | Amber Blinking (0.5 sec interval) | Amber Blinking (1 sec interval) |
| Power Consumption | LW15E13C : 40W (Max.)<br>LW17E14C : 52W (Max.) | Less than 3W | Less than 3W | Less than 3W |

*NOTE: This monitor automatically returns to normal operation when horizontal and vertical sync return. This occurs when you move the computer's mouse or press a key on the keyboard.*

This monitor is EPA ENERGY STAR® compliant and NUTEK/ENERGY2000 compliant when used with a computer equipped with VESA DPMS functionality.
For energy conservation, turn your monitor OFF when you are not using it or when leaving it unattended for long periods.

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## Troubleshooting

If you have a problem setting up or using your LCD monitor, you may be able to solve it yourself. Before contacting customer service, try the suggested actions that are appropriate to your problem.

Table 3. Troubleshooting – Image

| What you see... | Suggested Actions | Reference |
|---|---|---|
| Screen is black and power indicator is off | ■ Ensure that the power cord is firmly connected and the LCD monitor is on. | Connecting your LCD monitor, page 5. |
| " Check Signal Cable" message | ■ Ensure that the signal cable is firmly connected to the PC or video sources.<br>■ Ensure that the PC or video sources are turned on. | Connecting your LCD monitor, page 5. |
| "Sync. Out of Range" message | ■ Check the maximum resolution and the frequency of the video adaptor.<br>■ Compare these values with the data in the Display Modes Timing Chart. | Display Modes, page 31. |
| The image is too light or too dark | ■ Adjust the Brightness and Contrast. | Brightness, page 14.<br>Contrast, page 14. |
| Horizontal bars appear to flicker, jitter or shimmer on the image | ■ Adjust the Fine function. | Image Lock, Fine, page 15. |
| Vertical bars appear to flicker, jitter or shimmer on the image. | ■ Adjust the Coarse function and then adjust the Fine function. | Image Lock, Coarse, page 15.<br>Image Lock, Fine, page 15. |

# Appendix

Table 3. Troubleshooting – Image (Continued)

| What you see... | Suggested Actions | Reference |
|---|---|---|
| Screen is black and power indicator light is steady amber or blinks every 0.5 or 1 seconds | ■ The monitor is using its power management system.<br>■ Move the computer's mouse or press a key on the keyboard | Power Saver, page 24. |
| Image is not stable and may appear to vibrate | ■ Check that the display resolution and frequency from your PC or video board is an available mode for your monitor. On your computer check: Control Panel, Display, Settings | Display Modes, page 31. |
| | ■ If the setting is not correct, use your computer utility program to change the display settings. | Installing the Video Driver, page 7. |
| | *NOTE: Your monitor supports multiscan display functions within the following frequency domain:* | |
| | ■ Horizontal frequency: | LW15E13C : 30 kHz ~ 69 kHz<br>LW17E14C : 30 kHz ~ 81kHz |
| | ■ Vertical frequency: | 56 Hz ~ 85 Hz |
| | ■ Maximum refresh rate: | LW15E13C :<br>1024 x 768 @ 85 Hz<br>LW17E14C :<br>1280 x 1024 @ 76Hz |
| Image is not centered on the screen. | ■ Adjust the horizontal and vertical position. | H-Position, page 17.<br>V-Position, page 17. |
| You need the monitor driver software | ■ Download the driver from WWW pages:<br>http://www.samsung-monitor.com<br>http://www.samsungmonitor.com (USA Only) | |

# Appendix

Table 4. Troubleshooting – Audio and TV

| Problem | Suggested Actions | Reference |
|---|---|---|
| No sound | ■ Ensure that the audio cable is firmly connected to both the audio-in port on your monitor and the audio–out port on your sound card. | Connecting your LCD Monitor, page 5. |
| | ■ Check the volume level | Sound Controls. |
| Sound level is too low | ■ Check the volume level | Sound Controls. |
| | ■ If the volume is still too low after turning the control to its maximum, check the volume control on the computer sound card or software program. | Refer to your computer, sound card or software documentation. |
| Sound is too high pitched or too low pitched | ■ Adjust the Treble and Bass to appropriate level. | Sound Controls, page 17. |
| TV signal is not received | ■ Check “Channel system” and make sure you choose the correct channel system.<br>■ Select “Channel auto program” to configure the channel system automatically.<br>■ Check “TV Tuner Box” see “Connecting TV Tuner Box” on page 6. | See "PAL broadcasting systems" on page 32. |

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## Specifications

Table 5. Technical and environmental specifications

| | | LW15E13C | LW17E14C |
|---|---|---|---|
| Panel | Size<br>Display Size<br>Type<br>Pixel pitch<br>Viewing Angle | 15.0" Diagonal<br>304.1 (H) x 228.1 (V) mm<br>a-si TFT active matrix<br>0.297 (H) x 0.297 (V) mm<br>70/70/60/60 (L/R/U/D)<br>(Depending on the panel manufacturer, the viewing angle may be different from this spec.) | 17.0" Diagonal<br>338 (H) x 270 (V) mm<br>a-si TFT active matrix<br>0.264 (H) x 0.264 (V) mm<br>80/80/80/80 (L/R/U/D)<br>(Depending on the panel manufacturer, the viewing angle may be different from this spec.) |
| * Frequency | Horizontal<br>Vertical<br><br>Display color | 30 ~ 69 kHz<br>56 ~ 85 Hz<br><br>16,777,216 colors | 30 ~ 81 kHz<br>56 ~ 85 Hz (~XGA)<br>60 ~ 76 Hz (SXGA)<br>16,777,216 colors |
| Display Resolution | Optimum Mode<br>Maximum Mode | 1024 x 768 @ 60 Hz<br>1024 x 768 @ 85 Hz | 1280 x 1024 @ 60 Hz<br>1280 x 1024 @ 76 Hz |
| Input Signal | Sync.<br><br>Video signal | H/V Separate, TTL, P. or N.<br>H/V Composite, TTL, P. or N.<br>Sync-on-green 0.3 Vp-p, N.<br>0.7 Vp-p @ 75 ohm | |
| TV, Video | Color system<br>Sound system<br>Video format | PAL<br>B/G, D/K, I<br>CVBS, S-VHS | |
| Video | Color system | PAL/NTSC/SECAM | |
| Power Supply | Input<br>Output | 96 ~ 264 VAC rms (50Hz / 60Hz)<br>DC 12V/4.5A | |

* Referring to Preset timing modes, page 31.

# Appendix

Table 5. Technical and environmental specifications (Continued)

| | | LW15E13C | LW17E14C |
|---|---|---|---|
| Power Consumption | Maximum<br>Power Saving | 40 W<br>< 3 W | 52 W<br>< 3 W |
| Dimensions/ Weight | Unit (WxHxD) :<br>Monitor body | 14.1 x 13.8 x 2.0 inch / 7.2 lbs<br>(358.6 x 351.1x 51 mm / 3.3 kg) | 16.2 x 16.1 x 2.3 inch / 10.3 lbs<br>(412 x 408.0 x 58.5 mm / 4.7 kg) |
| | With stand | 14.1 x 14.2 x 6.9 inch / 7.7 lbs<br>(358.6 x 360.1 x 175.5 mm / 3.5 kg) | 16.2 x 16.5 x 8.0 inch / 11 lbs<br>(412.0x 418.0 x 203.0 mm / 5 kg) |
| | When folded | 14.1 x 15.9 x 2.0 inch / 7.7 lbs<br>(358.6 x 402.6 x 51 mm / 3.5 kg) | 16.2 x 18.6 x 2.3 inch / 11lbs<br>(412.0 x 472.0 x 58.5 mm / 5 kg) |
| Environmental Considerations | Operating Temperature | 50 ˚F to 104 ˚F (10 ˚C to 40 ˚C) | |
| | Operating Humidity | 10% to 80% | |
| | Storage Temperature | 13 ˚F to 113 ˚F (-25 ˚C to 45 ˚C) | |
| | Storage Humidity | 5% to 95% | |
| Audio Characteristics | Audio Input 1<br>Audio Input 2<br>Headphone out<br>Frequency Response | RCA Jack Red(R) White(L), 0.5Vrms (-9dB)<br>3.5ø Stereo Jack, 0.5Vrms (-9dB)<br>Max. 10mW Output (3.5ø Stereo Jack 32Ω)<br>RF: 80Hz ~ 15kHz (at- 3dB)<br>A/V: 80Hz ~ 20kHz (at - 3dB) | |

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## Pin Assignments

Table 6. 15 pin D-sub connector

| Pin | Separate H/V | Composite H/V | Sync-on-green |
|---|---|---|---|
| 1 | Red | Red | Red |
| 2 | Green | Green | Green + H/V Sync |
| 3 | Blue | Blue | Blue |
| 4 | GND | GND | GND |
| 5 | GND (DDC Return) | GND (DDC Return) | GND (DDC Return) |
| 6 | GND-Red | GND-Red | GND-Red |
| 7 | GND-Green | GND-Green | GND-Green |
| 8 | GND-Blue | GND-Blue | GND-Blue |
| 9 | No Connection | No Connection | Not used |
| 10 | GND-Sync/Self Test | GND-Sync/Self Test | GND-Sync/Self Test |
| 11 | GND | GND | GND |
| 12 | DDC _SDA | DDC _SDA | DDC _SDA |
| 13 | H_Sync | H/V Sync | Not used |
| 14 | V_ Sync | Not used | Not used |
| 15 | DDC _SCL | DDC _SCL | DDC _SCL |

# Appendix

## Display Modes

If the signal from the system equals to the standard signal mode, the screen is adjusted automatically. If the signal from the system doesn't equal to the standard signal mode, adjust the mode with refering to the Videocard user guide because the screen might not display or only the power LED might be on. For the display modes listed below, the screen image has been optimized during manufacture.

Table 7. Preset timing modes

| Mode | Resolution | Horizontal Frequency (kHz) | Vertical Frequency (Hz) | Pixel Clock Frequency (MHz) | Sync Polarity (H/V) |
|---|---|---|---|---|---|
| VGA | 720 x 400 | 31.469 | 70.087 | 28.322 | –/+ |
| | 640 x 480 | 31.469 | 59.940 | 25.175 | –/– |
| | 640 x 480 | 37.500 | 75.000 | 31.500 | –/– |
| | 640 x 480 | 43.269 | 85.008 | 36.000 | –/– |
| SVGA | 800 x 600 | 46.875 | 75.000 | 49.500 | +/+ |
| | 800 x 600 | 53.674 | 85.061 | 56.250 | +/+ |
| XGA | 1024 x 768 | 48.363 | 60.004 | 65.000 | –/– |
| | 1024 x 768 | 60.023 | 75.029 | 78.750 | +/+ |
| | 1024 x 768 | 68.677 | 84.997 | 94.500 | +/+ |
| SXGA (LW17E14C only) | 1280 x 1024 | 63.981 | 60.020 | 108.000 | +,–/+,– |
| | 1280 x 1024 | 79.976 | 75.025 | 135.000 | +/+ |

# Appendix

Table 8. PAL Broadcasting Systems

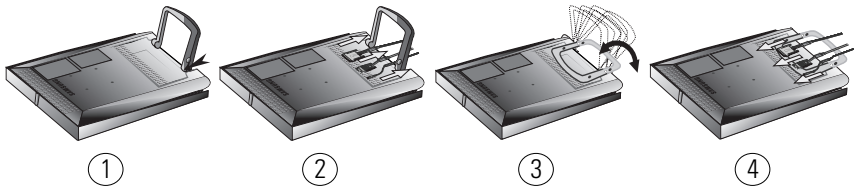
| Model Name | Color System | Sound System | Stereo System | Channel System | Countries |
|---|---|---|---|---|---|
| LW15E13C<br>LW17E14C | PAL | B/G | A2 | CCIR | Germany,Austria,Swiss, Netherlands |
| | | | | AUSTRALIA | Australia |
| | | | NICAM | CCIR | Sweden,Spain,Denmark, Norway,Finland,Belgium, Iceland,Portugal,Malaysia, Singapore,Thailand |
| | | | | ITALY | Italy |
| | | | Unknown | CCIR | India,Israel,Kuwait,Jordan, Yugoslavia |
| | | I | NICAM | CCIR | UK,Hongkong |
| | | | | IRELAND | Ireland |

# Appendix

## Attaching a wall or Arm mounting device

The monitor supports VESA mounting standard for use with various VESA mounting devices. To install any VESA mounting device, please follow the instructions given.

**Case 1.**




**1** Lay the LCD monitor face-down on a flat surface with a cushion or other soft materials to protect the screen.

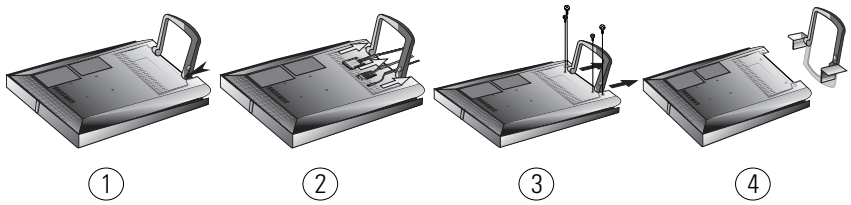
**2** Remove all cables connected to the monitor.

**3** Press "FOLD" button on the stand and tilt the monitor backward until the stand is folded in the monitor.

**4** Connect all cable you removed at step 2.

**5** Now you are ready to install Wall/Arm mounting device depending on your applications.

**Case 2.**




**1** Lay the LCD monitor face-down on a flat surface with a cushion or other soft materials to protect the screen.

**2** Remove all cable connected on the monitor.

**3** Remove the four screws and then remove the Stand from the LCD monitor.

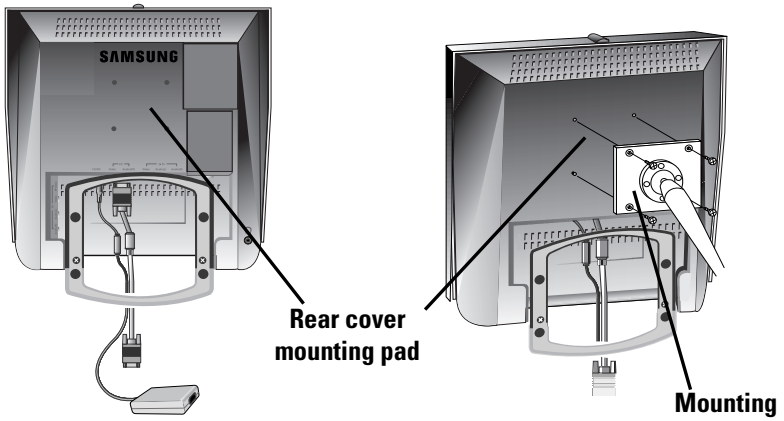
**4** Connect all cable you removeed at step 2.

**5** Now you are ready to install Wall/Arm mounting device depending on your applications.

# Appendix

## Installing VESA compliant mounting devices

Refer to page 33 to fold the base.




Align the mounting interface pad with the holes in the rear cover mounting pad and secure it with the four screws that came with the arm-type base, wall mount hanger or other bases.

### Wall Mount Instructions

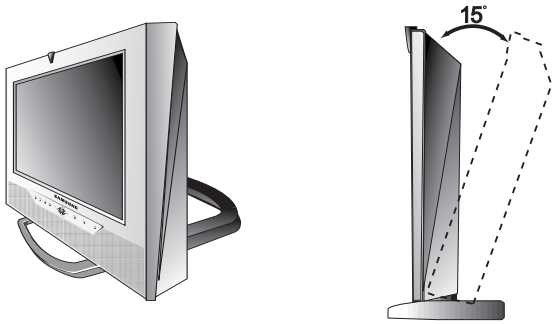
The following instructions apply to a hollow sheet-rock wall only Tools/Hardware needed - Philips screwdriver, four toggle bolts, 5/8in dia. Drill bit and drill. Contact Ergotron at (800) 888-8458 to purchase the triple pivot direct mount adapter and wall mount bracket kit.

- LW15E13C (15") : No. 47 - 007 - 099 (Pivot direct mount adapter)
  No. 97 - 101 - 003 (Wall mount bracket kit)
- LW17E14C (17") : No. 47 - 007 - 099 - 02 (Pivot direct mount adapter)
  No. 97 - 101 - 003 - 00 (Wall mount bracket kit)

Align the wall mount bracket on the wall at the desired height, making sure that the bracket will be mounted between the wall studs. Mark the four corner openings and drill four 5/8-dia. holes.
Assemble the wall mount kit according to the instructions provided with it.
Securely attach Ergotron's flat panel, triple pivot direct mount adapter to the back of the monitor using the four 4mm, .7 pitch x 10mm screws provided with the arm.
Secure the assembly to the wall using four 3/16 by 3-inch long toggle bolts.

# Appendix

## Retractable Stand




*NOTE: The maximum tilt angle is 15 degree to the backward direction. Please do not tilt the monitor other than specified range.* ***Excessive force to tilt the monitor other than specified range may give permanent damage to the mechanical part of the stand.***

## Maintenance of Your LCD TV/Monitor

**WARNING:** To avoid risk of electric shock, do not disassemble the monitor cabinet (except for gaining access to the cable connectors as described on page 5). Users cannot service the monitor. User maintenance is restricted to cleaning as explained below:

Unplug the monitor from the power outlet before cleaning.

- To clean your flat panel display screen, lightly dampen a soft, clean cloth with water or mild detergent. If possible, use a special screen cleaning tissue or solution suitable for the antistatic coating.
- To clean the monitor cabinet, use a cloth lightly dampened with a mild detergent.
- Never use flammable cleaning material to clean your LCD monitor or any other electrical apparatus.

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# Regulatory Information

## FCC Information

### User Instructions

The Federal Communications Commission Radio Frequency Interference Statement includes the following warning:

**Note:** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television receptions, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

### User Information

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

If necessary, consult your dealer or an experienced radio/television technician for additional suggestions. You may find the booklet called How to Identify and Resolve Radio/TV Interference Problems helpful. This booklet was prepared by the Federal Communications Commission. It is available from the U.S. Government Printing Office, Washington, DC 20402, Stock Number 004-000-00345-4.

### Warning

User must use shielded signal interface cables to maintain FCC compliance for the product.

### Declaration of conformity for products Marked with FCC Logo

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The party responsible for product compliance:

SAMSUNG ELECTRONICS CO., LTD
America QA Lab of Samsung
85 West Tasman Drive
San Jose, CA 95134 USA
Tel) 408-544-5124
Fax) 408-544-5191

Provided with this monitor is a detachable power supply cord with IEC320 style terminations. It may be suitable for connection to any UL Listed personal computer with similar configuration. Before making the connection, make sure the voltage rating of the computer convenience outlet is the same as the monitor and that the ampere rating of the computer convenience outlet is equal to or exceeds the monitor voltage rating.

For 120 Volt applications, use only UL Listed detachable power cord with NEMA configuration 5-15P type (parallel blades) plug cap. For 240 Volt applications use only UL Listed Detachable power supply cord with NEMA configuration 6-15P type (tandem blades) plug cap.

## IC Compliance Notice

This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations of ICES-003.

Cet appareil Numérique de classe B respecte toutes les exigences du Règlemont ICES-003 sur les équipements produisant des interférences au Canada.

## MPR II Compliance

This monitor complies with SWEDAC(MPR II) recommendations for reduced electric and magnetic fields.

## European Notice

Products with the CE Marking comply with both the EMC Directive (89/336/EEC), (92/31/EEC), (93/68/EEC) and the Low Voltage Directive (73/23/EEC) issued by the Commission of the European Community. Compliance with these directives implies conformity to the following European Norms:

- EN55022:1998 – Radio Frequency Interference
- EN55024:1998 – Electromagnetic Immunity
- EN61000-3-2:1995 + A1 + A2 – Power Line Harmonics
- EN61000-3-3:1995 – Voltage Fluctuations
- EN60950 – Product Safety.

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